# W6BXA Mainboard

## User's Manual

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# 1 Introduction

The W6BXA-0 is a high-performance mainboard that supports the powerful Intel Pentium II (operating at 233MHz to 600MHz) and Celeron processors. The board is designed around the Intel 82440BX AGPset chipset on the standard ATX form factor.

With a built-in AGP graphics port, Ultra DMA/33 Bus Mastering IDE controller, concurrent PCI bus, USB ports, and accommodation for both SDRAM and EDO memory, the board delivers workstation-level performance. When equipped with a Pentium II processor with MMX technology, your system has the power to handle demanding 32-bit applications on advanced 32-bit operating systems.

The board offers outstanding I/O capabilities, with Ultra DMA/33 Bus Mastering IDE interfaces, a floppy controller, two serial port connectors, an EPP/ECP-capable parallel port connector, an IrDA-compatible infrared port, two USB connectors, and more. The AGP slot, four PCI local bus slots, and three ISA bus slots provide outstanding expandability for add-on peripheral cards.

In addition, the board features a synchronous switching regulator and advanced power and system management functions. Three Dual Inline Memory Modules (DIMMs) allow as much as 384MB of 3V SDRAM memory or 768MB of 3V EDO memory. The board's BIOS supports automatic device detection--making setup of hard drives, expansion cards, and other devices virtually automatic. Furthermore, the W6BXA-0 uses the BIOS for clock frequency and CPU multiplier settings, so jumper switches are no longer needed for these settings.

## 1.1 Features

This section presents an overview of the board's special features.

### CPU Slot 1

Supports the following processors in a Single-Edge Contact Cartridge (SECC), Single-Edge Contact Cartridge 2 (SECC2), or Single-Edge Plastic Package (SEPP):

- Intel Pentium II processor (from 233MHz to 600MHz) with 512KB pipelined burst Level 2 cache.
- Intel Celeron processor with 128KB or 0KB Level 2 cache.

### The Intel® 440BX AGPset

The Intel® 440BX AGPset is the first chip set to deliver 100MHz system level bandwidth to unleash the full performance of the Intel® Pentium® II processors at 350MHz to 600MHz. The Intel 440BX AGPset improves system performance by increasing the bandwidth of the system bus from 66MHz to 100MHz.

### ISA and PCI Expansion Slots

Provides three 16-bit ISA expansion slots and four 32-bit PCI expansion slots.

### AGP Slot

Supports Accelerated Graphics Port cards for high-performance, component-level interconnect targeted at 3D graphical display applications.

### Versatile Memory Configuration

Three DIMM sockets support up to 384MB of 3.3V SDRAM memory or up to 768MB of 3.3V EDO DRAM memory. Synchronous Dynamic Random Access Memory (SDRAM) provides optimized performance through increased data transfer rate.

## Jumperless CPU Speed Setting

Lets you set CPU ratio and clock frequency through BIOS setup--without setting jumper switches. Because the correct CPU information is saved in the CPU itself, you don't have to worry about setting the wrong CPU voltage.

## Ultra DMA/33 Bus Mastering IDE Controller

Provides an Enhanced Intelligent Drive Electronics (IDE) hard disk controller. Support for Ultra DMA/33 speeds up disk drive access.

## Flash ROM BIOS and Enhanced ACPI

The programmable Flash ROM BIOS offers *Advanced Configuration and Power Interface* (ACPI). ACPI enables ACPI-supported operating systems (such as Windows 98) and applications to direct system power management.

## CPU Voltage Auto-Detect

Provides automatic CPU voltage detection. When a Pentium II CPU is installed, the switching regulator will automatically detect the correct voltage. When you upgrade the CPU, you don't have to worry about specifying the correct CPU voltage setting.

## Synchronous Switching Regulator

The highly efficient synchronous switching design reduces power consumption and heat generation and provides auto-detection of CPU voltage.

## Multi-Function Power On

The board provides a variety of methods for turning on the power to your system, including:

- Pressing the power button on the chassis front panel
- Typing a specified keyboard password
- Pressing designated hot keys
- Double-clicking the left or right button of a PS/2 mouse

You can choose the method for turning on the power in the BIOS setup program.

## External Modem Wakeup (Remote Ring On)

With an optional phone line and modem, the board can turn on automatically to answer a phone call.

## Wake On LAN

Provides a connector to an optional PCI LAN card (with remote wakeup capabilities) so that a remote server can turn on the system through a network.

## RTC Wakeup Timer

The RTC wakeup timer can turn on your system at a predefined date and time.

## Dual-Function Power Button (Soft-Off Control)

Use the power button to turn off the system instantly or with "soft-off" control. When soft-off is selected, pressing the power button will cause the system to enter Sleep (Suspend) mode. With soft-off, the system won't turn off unless you continuously hold the power button for 4 seconds or longer. This prevents you from accidentally turning off the system.

## Creative SoundBlaster Link

A header provides compatibility for the Creative SoundBlaster DOS program with the PCI bus. (Some DOS programs require the use of signals that were previously only available to an ISA bus card. This header now makes these signals available to PCI bus cards that may require them.)

## System Monitoring (Optional)

The optional Winbond W83781D Hardware Environment Monitoring chip allows monitoring of system voltage, temperature, and fan speed.

- The board monitors system voltage levels to ensure a stable current for critical board components.
- To prevent system overheating and damage, the board provides heat sensors (the Pentium II processor requires a special heatsink with a thermal sensor) to monitor the CPU and system temperatures.
- To prevent system overheating and damage, the board can monitor the CPU fan and system fan speeds. You can set each fan for its normal RPM range and alarm threshold.

## System Sleep (Suspend) Mode

To conserve energy, the system employs the following measures when in Sleep (Suspend) mode:

- The CPU stops running
- The chipset and related circuits go to the lowest power state
- The hard disk stops spinning
- The monitor goes blank
- The CPU cooling fan and system fan are turned off
- The Power LED indicator on the front panel dims when the system is in Suspend mode. (If you are using a 3-pin LED, it can display a different color when the system is in Suspend mode).

## Super Multi-I/O

Provides two high-speed UART-compatible serial ports and a parallel port with EEP and ECP capabilities. For wireless connections, you can connect an optional infrared module to the IrDA-compatible infrared port.

## Desktop Management Interface (DMI)

Supports DMI through the BIOS, which creates a higher level of compatibility by allowing hardware to communicate with a standard protocol.

## Automatic Device Detection

Auto-detection support in BIOS makes installation of hard drives, expansion cards, and other devices simple.

## 1.2 Specifications

| | |
|---|---|
| **Form Factor:** | ATX |
| **Board Size:** | 305 x 180mm (12.0" x 7.0") |
| **CPU:** | Slot 1 supports the Intel Pentium II (233MHz to 600MHz) series and Intel Celeron |
| **Second-Level Cache:** | On the Pentium II CPU card |
| **Chipset:** | Intel 82440BX AGPset; Winbond 83977TF-AW I/O chip. |
| **Voltage Regulator Module:** | Synchronous switching regulator; auto-detection of CPU voltage; provides 1.8V to 3.5V operating voltage |
| **Speed:** | System bus clock: 66/75/83/100/103/112/124/133MHz; AGP clock: 66/75/83MHz; PCI bus clock: 33/37/41MHz; ISA bus clock: 8.33~9.35MHz |
| **System Memory:** | Supports 3.3V SDRAM or EDO DRAM; 168-pin DIMM x 3, for a maximum of 384MB of SDRAM or 768MB of EDO DRAM. |
| **Enhanced I/O:** | • 2 X serial ports (16550-compatible UART)<br>• Parallel port with bidirectional lines supports Standard Parallel Port (SPP), Enhanced Parallel Port (EPP), and Extended Capabilities Port (ECP)<br>• Keyboard connector<br>• PS/2 mouse connector<br>• IrDA-compatible infrared port |
| **Expansion Slots:** | Provides 4 X 32-bit PCI local bus slots, 3 X 16-bit ISA expansion slots, and 1 X AGP slot |

| | |
|---|---|
| **EIDE Interface:** | Dual-Channel Enhanced Intelligent Drive Electronics (EIDE) interface supports up to 4 IDE hard disk drives or CD drives; supports PIO mode 0 through mode 4 drives; supports Bus Mastering DMA mode 2 drives and Bus Mastering Ultra DMA/33 drives |
| **Floppy Interface:** | Floppy disk drive controller supports 3.5-inch drives with 720KB, 1.44MB, 2.88MB format or 5.25-inch drives with 360KB or 1.2MB format |
| **USB Interface:** | 2 X USB ports supported by a USB connector |
| **Power Management:** | • Compliant with EPA, APM 1.2, and ACPI<br>• ATX soft-off power control<br>• Power-on by keyboard password, hot keys, PS/2 mouse, RTC alarm, external modem ring, or wake on LAN<br>• Suspend mode with Suspend mode LED indicator |
| **System Monitoring (Optional):** | • CPU temperature warning and system temperature detection<br>• CPU and system voltage detection<br>• CPU and secondary fan RPM detection |
| **Software:** | • Licensed Award Plug and Play BIOS; CPU speed setup by BIOS<br>• IDE bus mastering Ultra DMA driver<br>• Award Flash utility for BIOS upgrades<br>• Win P2X4 utility for Windows 95<br>• System Monitoring Utility |

## 1.3 What You Have

The W6BXA-0 mainboard comes securely packaged in a sturdy cardboard shipping carton. In addition to this *User's Manual*, the shipping carton contains:

- The mainboard
- CPU card retention mechanism
- CD with support drivers and utilities
- Floppy disk drive and IDE ribbon cables

If any of these items is missing or damaged, contact the dealer from whom you purchased the mainboard. Save the shipping materials and carton in case you want to ship or store the board in the future.

ⓘ ***Leave the main board in its original packing until you are ready to install it.***

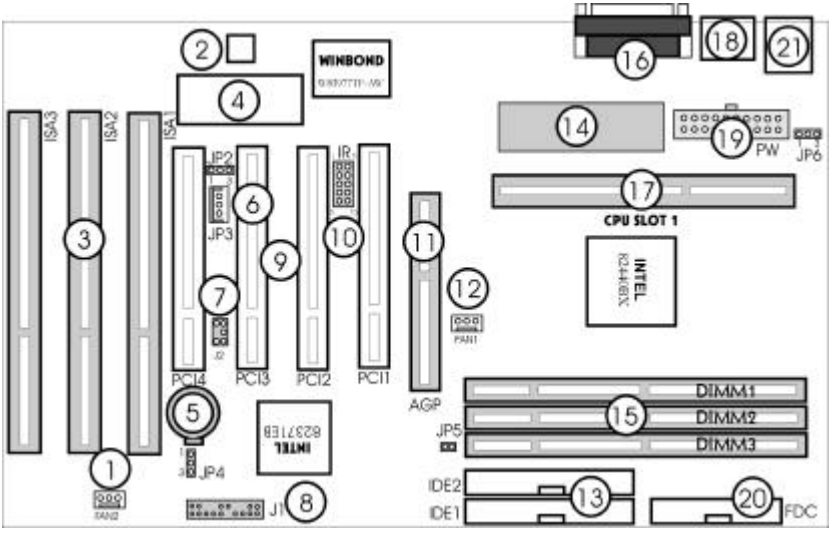
Inside the carton, the main board is sandwiched between sheets of sponge and packed in an anti-static bag. After you unpack the board, inspect it for damage. Press down all the integrated circuits to make sure they are properly seated in their sockets. Do not apply power to the board if it appears to have been damaged.

## 1.4 Precautions

Electrostatic discharge may damage the mainboard. Make sure you ground yourself before handling the mainboard or other system components.

- Do not remove the anti-static packaging until you are ready to install the mainboard.
- Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.
- Handle the mainboard by its edges and avoid touching its components.

In addition, take additional precaution when handling the mainboard in dry or air-conditioned environments.




| Reference Item | Reference Item |
|---|---|
| 1. Secondary FAN Connector | 12. CPU FAN Connector |
| 2. System Monitor Chip (optional) | 13. IDE1 & IDE2 Connector |
| 3. ISA Expansion Slots | 14. Switching Regulator |
| 4. System Flash BIOS | 15. DIMM Module Sockets |
| 5. Battery | 16. COM1/COM2/LPT Ports |
| 6. Wake On LAN Connector | 17. CPU SLOT1 |
| 7. SB-LINK Connector | 18. Dual USB Connector |
| 8. Front Panel Connector | 19. ATX Power Connector |
| 9. PCI Expansion Slots | 20. Floppy Drive Connector |
| 10. IR Port Connector | 21. PS/2Keyboard/Mouse Connector |
| 11. AGP Slots | |

## Jumper Switches

The board's jumper switches and their functions are listed in the table below. For the location of the switches on the board, see the layout diagram on the previous page. For a detailed description of these switches, refer to "Setting Jumper Switches" in Chapter 2.

| Switch | Function |
|---|---|
| JP6 | 5V keyboard and PS/2 mouse voltage |
| JP5 | CPU over-frequency |
| JP4 | Real-time clock |
| JP2 | Flash ROM BIOS voltage |

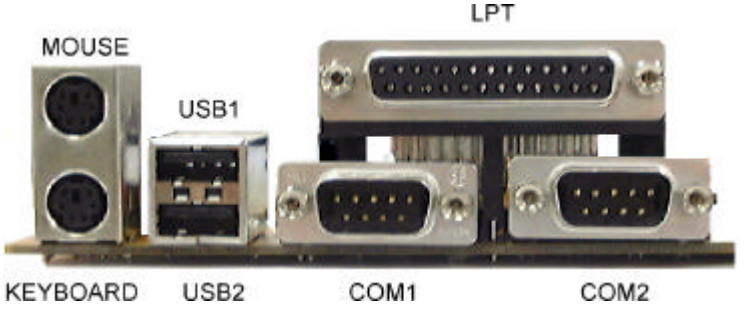
## Expansion Slots

The bus and memory expansion slots are listed in the table below. For the location of the slots on the board, see the layout diagram earlier in this section. For a detailed description of installing memory, refer to "Installing Memory" in Chapter 2.

| Slot | Function |
|---|---|
| Slot 1 | CPU socket for an Intel Pentium II or Celeron processor |
| DIMM1, DIMM2,DIMM3 | 168-pin expansion slots for 3.3V SDRAM or EDO DRAM memory |
| PCI1, PCI2, PCI3, PCI4 | 32-bit PCI bus expansion slots for optional PCI cards |
| ISA1, ISA2, ISA3 | 16-bit ISA bus expansion slots for optional ISA cards |
| AGP | Expansion slot for an Accelerated Graphics Port card |

## Rear Panel Connectors

This section shows and describes the connectors on the board's rear panel.




| Connector | Description |
|---|---|
| Mouse | **PS/2 Mouse connector (top).** Connect a PS/2 mouse to this six-pin female mini-DIN connector. |
| Keyboard | **PS/2 Keyboard connector (bottom).** Connect a PS/2-compatible keyboard to this six-pin female mini-DIN connector. |
| USB1, USB2 | **Universal Serial Bus ports.** Connect USB devices to these connectors**.** |
| LPT | **Parallel Printer connector.** Connect a parallel printer or EPP/ECP device to this port. |
| COM1, COM2 | **Serial connectors.** Connect serial devices to these 9-pin connectors. |

## Onboard Connectors

This section describes the connectors on the main board. For the location of the connectors on the board, see the layout diagram earlier in this section.

| Connector | Description |
|---|---|
| PW | **ATX Power Supply connector.** Use this connector to connect the board to an ATX power supply. |
| FAN1, FAN2 | **Fan connectors.** Connect cooling fans to these connectors. |
| IR | **IrDA connector.** Connect an optional wireless transmitting and receiving infrared module to this connector. |
| FDC | **Floppy Disk Drive connector.** Connect the single end of a floppy disk drive cable to this 34-pin connector block. Connect the other ends of the cable to one or more floppy disk drives. |
| IDE1 | **Primary IDE connector.** Connect the single end of the included IDE cable to this 40-pin connector block. Connect the other ends of the cable to one or more hard disk drives. Note that if you install two hard disk drives with this connector, you must set the second drive to Slave mode. (For a description of using Master and Slave modes, refer to the documentation that came with your hard disk drive.)<br>***Note: If you want to have two hard disk drives both configured to Master mode, attach one drive to the IDE1 connector and another to the IDE2 connector.*** |

| Connector | Description |
|---|---|
| IDE2 | **Secondary IDE connector.** Connect the single end of an IDE cable to this 40-pin connector block. Connect the other ends of the cable to one or more hard disk drives. Note that if you install two hard disk drives with this connector, you must set the second drive to Slave mode. (For a description of using Master and Slave modes, refer to the documentation that came with your hard disk drive.) |
| J1 | **Front Panel connector.** Connect these connectors to the appropriate features on the front panel: Power LED & Key Lock, internal speaker, HDD LED, Reset button, Power Switch. |
| JP3 | **Wake On LAN connector.** Connect an optional LAN card to this 3-pin connector. This allows the system to power up when a wakeup signal is received from the network through the LAN card. |
| J2 | **Creative Labs SB-Link connector.** Connect an optional Creative Labs PCI sound card to this connector. |

# 2 Setting Up the Mainboard

This chapter shows you how to set up the mainboard for operation, including:

- Setup overview
- Installing the CPU, including installing the retention mechanism
- Installing memory
- Setting jumper switches
- Making connections
- Using system power on/off control
- Using Suspend mode
- Monitoring the system

## 2.1 Setup Overview

To make the installation process as simple as possible, this section provides step-by-step instructions for setting up mainboard components.

### 1. Disconnect the Power Supply

Unplug all cables going into the computer before actually opening the case. Any area of the mainboard you plan to modify could be damaged by power input during the installation process.

### 2. Open the System Chassis

Open the computer case according to the instructions in your original user's manual. It is better to use a magnetic screwdriver as screws inevitably will drop into the case and may damage internal components.

ⓘ ***If your case is sealed and has a notice advising that breaking the seal will invalidate the warranty, check with your dealer before opening the case.***

## 3. Install the CPU

Install the retention mechanism according to the manufacturer's instructions, then install the CPU itself (see the detailed description later in this chapter).

ⓘ ***If the default CPU speed values are not available and the system doesn't work, press and hold the <INS> key as you turn on the system power. The system will display "Low Speed Type" and allow you to change the CPU speed in the CMOS Setup program.***

## 4. Connect the Front Panel Connector (J1)

Attach connector J1 from the mainboard to the computer's front panel to install the Power LED & Key Lock, Speaker, HDD LED, Reset button, and Power Switch (for details, refer to "Making Connections" later in this chapter). Pay attention to the correct orientation of the cables and pins. If the LED wires are not mounted correctly, the LEDs will not light up.

## 5. Connect Peripheral Cables

Connect cables from the floppy disk drive, keyboard, mouse, printer, and any other I/O devices to their appropriate ports on the mainboard (for details, refer to "Making Connections" later in this chapter). Pay attention to the orientation of each cable and plug: if a cable is plugged in upside down, the hardware will not function and may be damaged. On each cable, the pin 1 plug is denoted by a red wire. Additionally, most peripheral plugs are flat on one side and notched on the other to denote proper orientation.

ⓘ ***The keyboard port is designed for a PS/2-compatible keyboard. If your keyboard has a different kind of connector, you can use an optional adapter cable to connect the keyboard.***

ⓘ ***The PS/2 mouse port is designed for PS/2-compatible mouse. If you have a different type of mouse, you can still use the COM1 or COM2 port to connect the mouse.***

## 6. Plug in Peripheral Cards

Plug in the VGA card and any other PCI/ISA peripheral cards that you wish to use.

## 7. Install the DRAM Modules

Install Dual Inline Memory Modules (DIMMs) into the board's DIMM sockets. The board's three DIMM sockets allow as much as 384MB of 3.3V SDRAM memory or 768MB of 3.3V EDO DRAM memory.

## 8. Connect the ATX Power Supply Connector

Plug the cable into the board's ATX power connector (PW).

## 9. Recheck all Connections

Recheck all connections to make sure they are correct.

## 10. Connect the Power Cable

Connect the power cable from the computer to an AC outlet and make sure the voltage is correct for your area (110V or 220V).

## 11. Turn on the Computer and Enter the BIOS Setup

Press the power button and, when the bootup screen appears, enter the BIOS Setup program by pressing <DEL>.

## 12. Close the System Chassis

When you are sure that everything is working properly, close the system chassis.

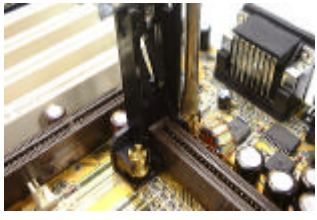
## 2.2 Installing the CPU

The board's Slot 1 supports current-generation Intel Pentium II and Celeron processors, and also supports a future technology upgrade path.

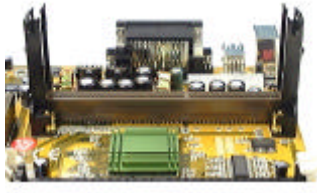
### Installing the Retention Mechanism

➲ **To install the retention mechanism:**

1. Insert the Attach Mount Bridges from the underside.



2. Mount the Retention Mechanism on the Attach Mout Bridges and screw the captive nuts in place.



3. The installed retention mechanism appears as follows

ⓘ ***The retention mechanism may be used by different type. The method of the installation should be a little difference. If you do not understand how to install, please contact your vendor to get more detail information. The above picture is just for your reference.***

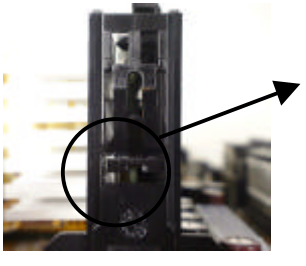
## Installing a Pentium-II CPU

➲ **To install a Pentium-II CPU:**

1. To install a Pentium II CPU in Slot 1, push the plastic package into the slot until you hear it click into place.

2. Attach the small end of the power cable to the 3-pin connector on the processor, then attach the large end to the 3-pin connector on the board, which is marked FAN1.

3. If you are installing a SECC type CPU, make sure the CPU is secured in place by pushing the locks outward so that the lock shows through the retention mechanism's lock holes.



4. If you are installing a SEPP or SECC2 type CPU, make sure the clamps on both side of retention mechanism lock the notches on the thermal pad.

## Setting the CPU Speed, CPU Ratio, and Clock Frequency

The board's "jumperless" CPU speed setting lets you set the CPU ratio and clock frequency through BIOS setup--without setting jumper switches. You don't have to worry about setting the wrong CPU voltage when using a different speed of CPU. Because the CPU VID signal is already preset to control the onboard switching regulator, when you plug in the CPU, the switching regulator will produce the correct voltage. Refer to the table below and select the correct CPU speed.

| CPU Speed | External Clock Frequency | Ratio |
|---|---|---|
| 233MHz | 66 MHz | 3.5 |
| 266MHz | 66 MHz | 4 |
| 300MHz | 66 MHz | 4.5 |
| 333MHz | 66 MHz | 5 |
| 366MHz | 66 MHz | 5.5 |
| 400MHz | 66 MHz | 6 |
| 433MHz | 66 MHz | 6.5 |
| 466MHz | 66 MHz | 7 |
| 500MHz | 66 MHz | 7.5 |
| 533MHz | 66 MHz | 8 |
| 300MHz | 100MHz | 3 |
| 350MHz | 100MHz | 3.5 |
| 400MHz | 100MHz | 4 |
| 450MHz | 100MHz | 4.5 |
| 500MHz | 100MHz | 5 |
| 550MHz | 100MHz | 5.5 |
| 600MHz | 100MHz | 6 |
| 650MHz | 100MHz | 6.5 |
| 700MHz | 100MHz | 7 |
| 750MHz | 100MHz | 7.5 |
| 800MHz | 100MHz | 8 |

You can set the CPU to run over-frequency.

➲ **To set the CPU speed to run over-frequency:**

1. Set JP5 to open. When this jumper is open, the external clock will run at 100MHz instead of 66MHz.
2. Turn on the system. The following message appears:

> **CMOS checksum error – Defaults loaded**
>
> **Warning! CPU has been changed.**
>
> **Please re-enter CPU settings in the CMOS setup and remember to save before quitting!**
>
> **Press F1 to continue, DEL to enter SETUP**

ⓘ ***If you change the different type of CPU. The above message will appear, you must run the setup program to set the correct CPU speed again.***

3. Set the CPU ratio and clock frequency in the CPU Features setup of the CMOS setup program.

ⓘ ***The CPU core frequency = ratio ´ external bus clock.***

ⓘ ***If the system cannot boot after changing the CPU speed, you can reset the speed to default values by clearing CMOS memory or powering on the system while pressing the "INS" key until the bootup screen appears.***

## 2.3 Installing Memory

A Dual In-Line Memory Module (DIMM) is a small circuit board filled with DRAM chips that can be installed in one of the board's DIMM sockets.

The board's three DIMM sockets allow as much as 384MB of 3.3V SDRAM memory or 768MB of 3.3V EDO DRAM memory. The DIMM socket supports 1Mx64/72 (8MB), 2Mx64/72(16MB), 4Mx64/72(32MB), 8Mx64/72(64MB), 16Mx64/72(128MB),32Mx64/72(256MB) single or double sided DIMM modules. You can install a DIMM into any DIMM socket. Mixing DRAM type within one system is not supported. There are no jumper settings required for the memory size or type, as these are automatically detected by the BIOS.

In order to create a memory array. The following set of rules allows for optimum configurations.

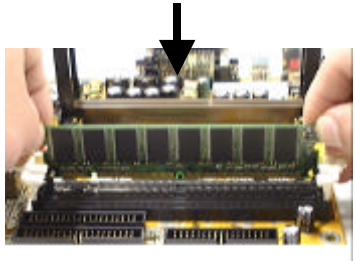
- The memory array is 64 or 72 bits wide (with ECC or without ECC)
- Those modules can be installed in any order.
- Support single and double density DIMM
- EDO memory speed: 60ns or faster (Only for 66MHz system clock)
- SDRAM memory speed: 66.6MHz or faster, CAS latency : 2 or 3

ⓘ ***Don't mix EDO DRAM and SDRAM on the mainboard at the same time, if you do so, only SDRAM will be detected.***

**The following table is the valid memory configuration:**

| DIMM | DIMM Moudle | Total Memory |
|---|---|---|
| DIMM1 | 8MB, 16MB, 32MB, 64MB, 128MB,256MB | 8MB~256MB |
| DIMM2 | 8MB, 16MB, 32MB, 64MB, 128MB,256MB | 8MB~256MB |
| DIMM3 | 8MB, 16MB, 32MB, 64MB, 128MB,256MB | 8MB~256MB |
| Total System Memory | | 8MB~768MB |

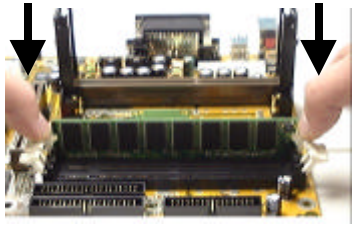
➲ **To insert the DIMM Module:**



To insert a DIMM, align the module with the socket key and press down until the levers at each end of the socket snap closed.

ⓘ ***There is only one orientation for installing a module in the socket. Do not attempt to force the module into the socket incorrectly.***

➲ **To remove the DIMM Module:**



To remove a DIMM, press down on the levers at the end of the module until the module pops out.

## 2.4 Setting Jumper Switches

You can configure several operating characteristics of the main board by setting jumper switches on the board. A jumper switch is closed (sometimes referred to as 'shorted') with the plastic cap inserted over two pins of the jumper. A jumper is open with the plastic cap inserted over one or no pin(s) of the jumper.

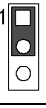
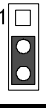
ⓘ ***When a jumper is open, keep the plastic cap inserted over one pin of the jumper so that you don't lose it.***

For the positions of the jumpers on the board, refer to the layout diagram in Chapter 1.

### JP6: 5V Keyboard and PS/2 Mouse Voltage

When 5V Standby is selected (the default setting), the keyboard and PS/2 mouse have voltage when the system power is turned off. In order to use the keyboard password, keyboard hot keys, or PS/2 mouse power on functions, 5V Standby must be selected.

ⓘ ***To use the keyboard password, keyboard hot keys, or PS/2 mouse power on functions, the 5V Standby current must be over 720mA.***

| JP6 | Keyboard and PS/2 Voltage |
|---|---|
|  | 5V Standby (default) |
|  | 5V Standard |

## JP5: CPU Over-Frequency

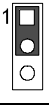
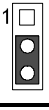
When this jumper is open, a 66MHz external clock CPU will run at 100MHz.

| JP5 | CPU Frequency |
|---|---|
| | Normal operation (default) |
| | Over-frequency |

## JP4: Real-Time Clock

When pins 2-3 are shorted, the CMOS data (including date, time, hard disk drive configuration, floppy disk drive type, and passwords) will be cleared. After clearing the CMOS data, be sure to again short pins 1-2, or the system will not work properly.

ⓘ ***This jumper has already been set for you. Reset the jumper only if you want to delete your previous CMOS setup.***

| JP4 | Real-Time Clock |
|---|---|
|  | Normal operation (default) |
|  | Clear CMOS data |

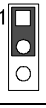
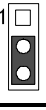
➲ **To clear CMOS:**

1. Turn off the power supply.
2. Remove the ATX power cable from the PW connector.
3. Locate JP4 and short pins 2-3 for a few seconds.
4. Return JP4 to its normal setting by shorting pins 1-2.
5. Connect the ATX power cable to the PW connector.
6. Turn on the power supply.
7. Press the "DEL" key to enter the BIOS Setup and specify a new password or CPU speed.

## JP2: Flash ROM BIOS Voltage

This jumper lets you select the Flash ROM BIOS voltage.

ⓘ ***This jumper has been preinstalled and preset for you by the manufacturer. You are advised to change the jumper setting only if you want to change the Flash ROM chip***.

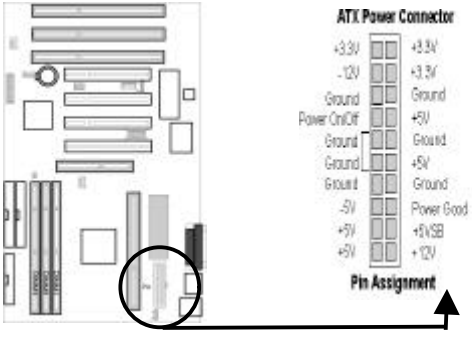
| JP2 | Flash ROM Voltage |
|---|---|
|   | 5V Flash ROM BIOS (factory preset) |
|   | 12V Flash ROM BIOS |

## 2.5 Making Connections

***CAUTION:*** ***Before making connections on the board, make sure that the power to the system is turned off.***

***IMPORTANT:*** ***When connecting ribbon cables, make sure that the red stripe on the cable corresponds to pin 1 of the connector (as labeled on the board).***

### PW: ATX Power Supply Connector

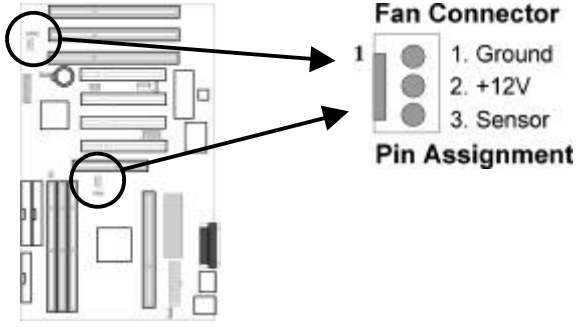



This 20-pin connector connects to an ATX power supply. Find the correct orientation and push the plug down firmly, making sure the pins are aligned. (Due to different hole sizes, you can insert the plug in only one orientation.)

☞ ***Incorrect installation of the power supply could result in serious damage to the board and connected peripherals.***

ⓘ ***Make sure that your ATX power supply can supply at least 10mA on the 5V standby lead. For Wake On LAN and Keyboard Password/Hot Key power on, the power supply must provide at least 720mA. If your power supply cannot support the load, the board may not function properly.***

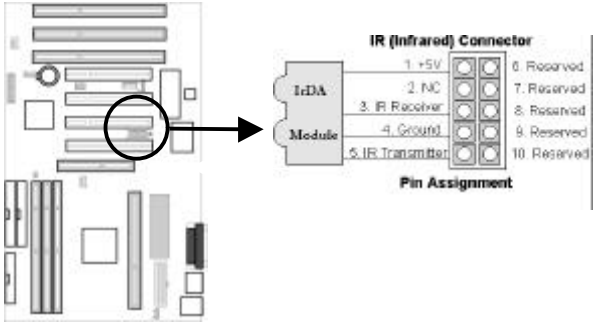
## Fan1, Fan2: Fan Connectors




These 3-pin connectors support fans of 12V DC/500mA (6W) or less with a minimum of 3,500RPM.

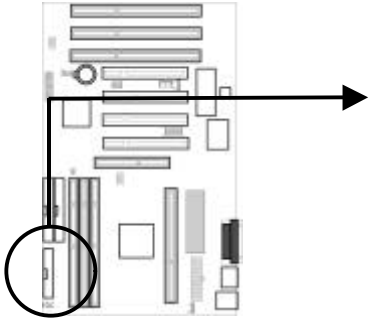
☞ ***The CPU and board will overheat if there is insufficient airflow across the CPU.***

## IR: IrDA Connector



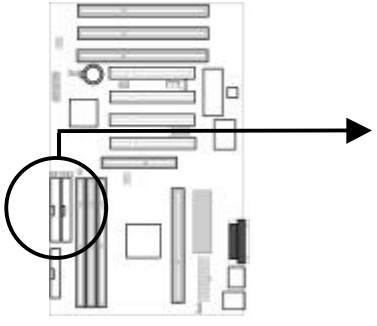

This 5-pin connector supports an optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. Connect a ribbon cable from the module to the connector according to the pin definitions.

## FDC: Floppy Disk Drive Connector



Connect the single end of a floppy disk drive cable to this 34-pin connector block. Connect the other ends of the cable to one or more floppy disk drives. The connector with twisted wires always connects to drive A; the connector without twisted wires connects to drive B.

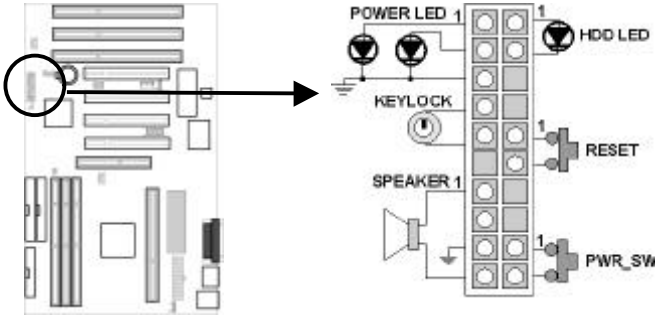
## IDE1, IDE2: Primary and Secondary IDE Connectors



These connectors support IDE hard disk and CD-ROM drives. After connecting the single end of the provided IDE ribbon cable to the board, connect the two plugs at the other end to your hard disk or CD-ROM drives.

ⓘ ***If you install two hard disks from the same connector, you must set the second drive to Slave mode. You can configure two hard disks to Master mode by using one ribbon cable on the primary IDE connector and another on the secondary IDE connector.***

## J1: Front Panel Connector




The J1 connector actually consists of five connectors for the speaker, switches, and LED indicators on the front panel.

ⓘ ***The front panel on the system chassis may also have a Turbo switch for deactivating turbo mode when a slower speed is required. The Intel 440BX AGPset chipset does not support the hardware turbo function. If necessary, you can press the <CTRL><ALT><+/-> keys to change the speed.***

### HDD LED Lead

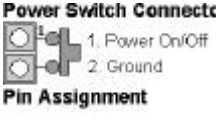
This 2-pin connector connects to the case-mounted HDD LED and indicates hard disk drive activity

ⓘ ***If the LED does not light up, try reversing the plug.***

### Reset Switch Lead

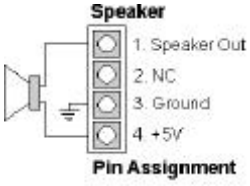
This 2-pin connector connects to the case-mounted Reset switch. You can use it to reboot the system.

### ATX Power Switch/Soft Power Switch Lead



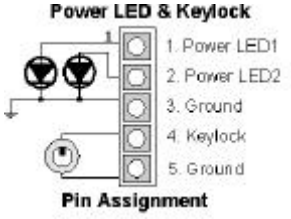

This 2-pin connector connects to the case-mounted power button.

### Speaker Lead




This 4-pin connector connects to the case-mounted speaker.

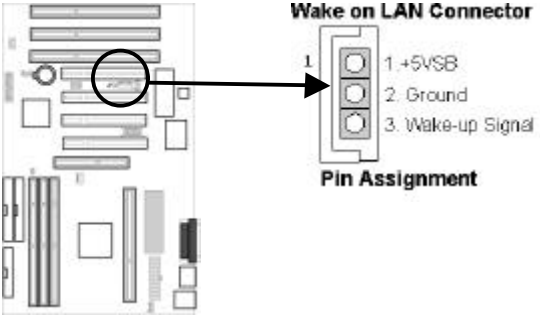
### Power & Key Lock Switch Lead




This 5-pin connector connects to a case-mounted Power LED and keylock switch. You can use the keylock switch to lock the keyboard for security purposes.

ⓘ ***The Message LED dims when the system is in Suspend mode. (If you are using a 3-pin LED, it can display a different color when the system is in Suspend mode).***

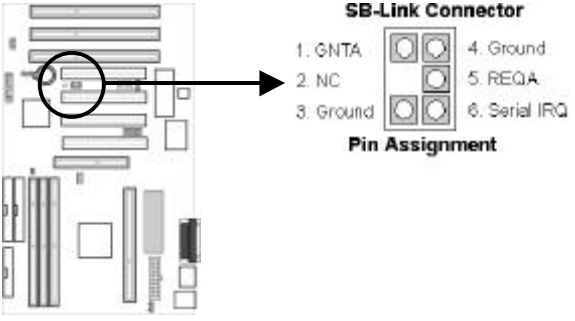
## JP3: Wake On LAN Connector




This 3-pin connector allows the system to power up when a wakeup signal is received from the network through an optional LAN card (with remote wakeup capabilities).

ⓘ ***This function requires an ATX power supply with at least 720mA 5VSB.***

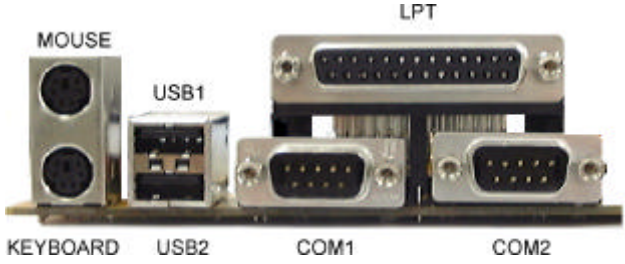
## J2: Creative Labs SB-Link Connector




Connect an optional Creative Labs PCI sound card to this 5-pin connector. This connector is necessary for migrating the legacy Sound Blaster-compatible audio to the PCI bus.

## Rear Panel Connectors

The rear panel connectors consist of the COM1, COM2, LPT, USB, Keyboard, and PS/2 Mouse connectors.




### COM1, COM2

These 9-pin connectors support serial devices.

### LPT

This connector supports a parallel printer or EPP/ECP device.

### USB1, USB2

These connectors support Universal Serial Bus devices.

### Keyboard

This 6-pin connector supports a PS/2-compatible keyboard.

### Mouse

This 6-pin connector supports a PS/2-compatible mouse.

## 2.6 About the System Power On/Off Control

This section describes supported functions for turning system power on and off.

### Selecting the System Power On Function

You can turn on power to the system by a variety of methods, including pressing the front panel power button, entering a keyboard password, pressing hot keys on the keyboard, or by double-clicking a PS/2 mouse. You can also turn power on automatically through an external modem ring, an alarm at a specified date and time, or from a LAN card. The methods that you can use will depend on the board's JP6 setting and/or BIOS setup.

- To use only the front panel power button, select the BUTTON ONLY option in "POWER ON Function" of the BIOS Integrated Peripherals setup. When this option is selected, you will not be able to use the keyboard password, keyboard hot keys, or PS/2 mouse functions.
- To use a keyboard password, make sure pins 1-2 of JP6 are shorted and select the Password option in "Power On Function" of the BIOS Integrated Peripherals setup. Then enter your password in the KB Power On Password option. When the keyboard password option is selected, you will only be able to turn on the system by entering your password--you will not be able to turn on the system using any other methods. However, you can use the power button to turn the system off.
- To use keyboard hot keys, make sure pins 1-2 of JP6 are shorted and select the Hot KEY option in "Power On Function" of the BIOS Integrated Peripherals setup. Then choose the desired hot keys (Ctrl-F1 through Ctrl-F10) in the Hot Key Power ON option. When this option is selected, you can turn on the system power either by pressing the selected hot keys or by pressing the power button.
- To use the PS/2 mouse, make sure pins 1-2 of JP6 are shorted and select either the Mouse Left or Mouse Right option in "Power On Function" of the BIOS Integrated Peripherals setup. When this option is selected, you can turn on the system by double-clicking the selected mouse button or by pressing the power button.

- To use the Modem Ring On function, enable the "PowerOn By Ring" option in the BIOS Power Management Setup.
- To use the Alarm On function, enable the "Resume By Alarm" option in the BIOS Power Management Setup. Then enter the desired date in the Date (of Month) Alarm option and the desired time in the Time (of Month) Alarm option.
- To use the Wake On LAN function, enable the "Wake Up On LAN" option in the BIOS Power Management Setup.

## Selecting the System Power Off Function

You can use the power button to turn off the system instantly or with "soft-off" control.

- To turn off the system power immediately on pressing the power button, select the Instant-Off option in "Soft-Off by PWR-BTTN" of the BIOS Power Management Setup.
- To use the soft-off function, select the Delay 4 Sec. option in "Soft-Off by PWR-BTTN" of the BIOS Power Management Setup. When this option is selected, pressing the power button will cause the system to enter Sleep (Suspend) mode (press the button again to resume). With soft-off, With soft-off, the system won't turn off unless you continuously hold the power button for 4 seconds or longer.

You can also turn off system power via software control. The system BIOS will turn the system power off when it receives a command from the operating system (such as when the user selects Shut Down in the Windows 95/98 Start menu). In order for the Soft Off feature to work, you must enable "PM Control by APM" in the BIOS Power Management Setup and load the operating system's APM/ACPI driver.

## 2.7 Using System Sleep/Resume

When the system enters Sleep (Suspend) mode, the CPU stops running, the chip set and related circuits go to the lowest power state, the hard disk stops spinning, and monitor goes blank, the Power LED indicator on the front panel dims, and the CPU cooling fan and system fan are turned off.

ⓘ ***In order to turn off the fans in Sleep (Suspend) mode, you need to connect the CPU cooling fan and chassis fan to the onboard fan power connectors marked FAN1 and FAN2, respectively.***

When Advanced Power Management (APM) is activated in the system BIOS and the operating system's APM/ACPI driver is loaded, you can enter Sleep (Suspend) Mode by one of the following methods:

- Pressing the front panel power button.
- Selecting "Suspend" in the Windows 95/98 Start Menu.

ⓘ ***To enter Suspend mode by pressing the power button, the Delay 4 Sec. option must be selected in "Soft-Off by PWR-BTTN" of the BIOS Power Management Setup.***

The system will also enter Sleep (Suspend) Mode if there is no system activity for a predefined length of time.

You can resume using the keyboard, pushing the power button, clicking the mouse, or by using the Reload Global Timer Events in the BIOS Power Management Setup.

## 2.8 Monitoring the System (optional)

The optional Winbond W83781D Hardware Environment Monitoring chip and software lets you monitor the system environment such as the system fan and CPU fan speeds, CPU warning temperature, system temperature, and system operating voltages.

# 3 Award BIOS Setup

The ROM chips of your mainboard are configured with a customized Basic Input/Output System (BIOS) from Award Software Inc. The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics. It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system. It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on. The BIOS also includes CMOS Setup programs, so no disk-based setup program is required. CMOS RAM stores information for:

- the date and time
- the memory capacity of the main board
- the type of display adapter installed
- the number and type of disk drives installed

The CMOS memory is maintained by a battery installed on the main board. By using the battery, all memory in CMOS can be retained when the system power switch is turned off.

## 3.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose "LOAD SETUP DEFAULTS" from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose "STANDARD CMOS SETUP" from the main menu. This option lets you configure the date and time, hard disk drive type, floppy disk drive type, primary display, and more.
3. Choose "CPU FEATURE SETUP" from the main menu, there is a "CPU Speed" option. Refer to the following table and select the correct CPU speed.

| CPU Speed | External Clock Frequency | Ratio |
|---|---|---|
| 233MHz | 66 MHz | 3.5 |
| 266MHz | 66 MHz | 4 |
| 300MHz | 66 MHz | 4.5 |
| 333MHz | 66 MHz | 5 |
| 366MHz | 66 MHz | 5.5 |
| 400MHz | 66 MHz | 6 |
| 433MHz | 66 MHz | 6.5 |
| 466MHz | 66 MHz | 7 |
| 500MHz | 66 MHz | 7.5 |
| 533MHz | 66 MHz | 8 |
| 300MHz | 100MHz | 3 |
| 350MHz | 100MHz | 3.5 |
| 400MHz | 100MHz | 4 |
| 450MHz | 100MHz | 4.5 |
| 500MHz | 100MHz | 5 |
| 550MHz | 100MHz | 5.5 |
| 600MHz | 100MHz | 6 |
| 650MHz | 100MHz | 6.5 |
| 700MHz | 100MHz | 7 |
| 750MHz | 100MHz | 7.5 |
| 800MHz | 100MHz | 8 |

4. In the main menu, press F10 ("Save & Exit Setup") to save your changes and reboot the system.

## 3.2 Entering the CMOS Setup Program

Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Receive an error code at startup
- Install another disk drive
- Use your system after not having used it for a long time
- Find the original setup missing
- Replace the battery
- Change to use different type of the CPU
- After running the awdflash program to update the system BIOS

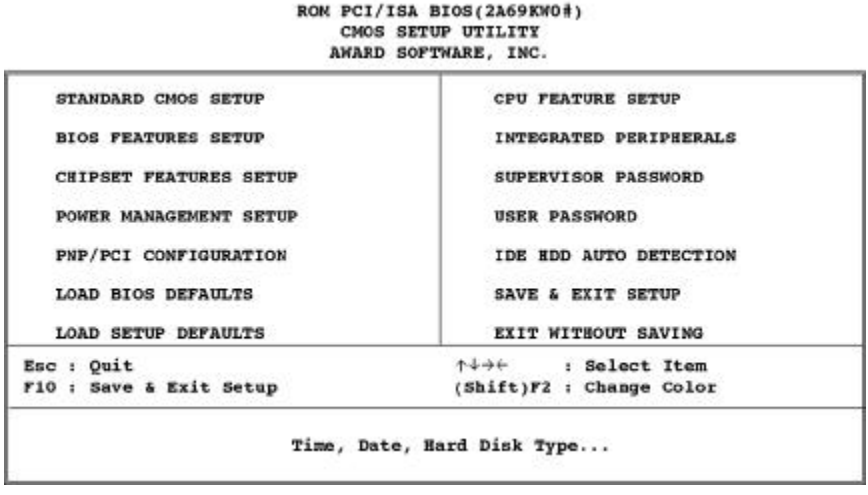
Run the CMOS Setup program after you turn on the system. On-screen instructions explain how to use the program.

**➲ Enter the CMOS Setup program's main menu as follows:**

1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:

   "Press DEL to enter SETUP"

2. Press the <DEL> key to enter the CMOS Setup program. The main menu appears:




3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

In the main menu, press F10 ("Save & Exit Setup") to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

## 3.3 Menu Options

The main menu options of the CMOS Setup program are described in the table below and in the following sections of this chapter.

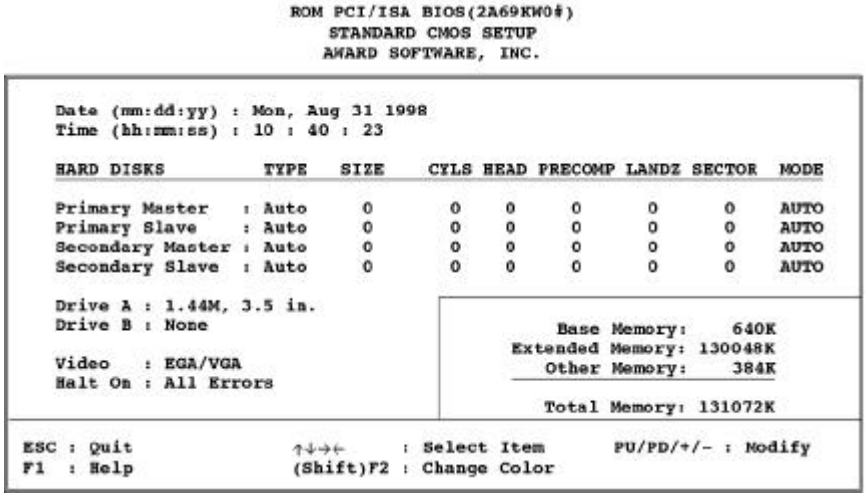
| Option | Function |
|---|---|
| STANDARD CMOS SETUP | Configure the date & time, hard disk drive type, floppy disk drive type, primary display type, and more. |
| BIOS FEATURES SETUP | Configure advanced system options such as enabling/disabling cache memory and shadow RAM. |
| CHIPSET FEATURES SETUP | Configure advanced chipset register options such as DRAM timing. |
| POWER MANAGEMENT SETUP | Configure power management features such as timer selects. |
| PNP/PCI CONFIGURATION | Configure Plug 'n' Play IRQ assignments and PCI slots. |
| LOAD BIOS DEFAULTS | Loads BIOS default values. Use this option as a diagnostic aid if your system behaves erratically. |
| LOAD SETUP DEFAULTS | Loads optimized BIOS settings. |
| CPU FEATURE SETUP | Configure the CPU speed and, if the optional Winbond W83781D system monitor IC is installed, view system information. |
| INTEGRATED PERIPHERALS | Configure onboard I/O functions. |

| Option | Function |
|---|---|
| SUPERVISOR PASSWORD | Configures the system so that a password is required when the system boots or you attempt to enter the CMOS setup program. When you log in with this password, you will be able to enter all menus in the CMOS Setup program. |
| USER PASSWORD | Configures the system so that a password is required when the system boots or you attempt to enter the CMOS setup program. When you log in with this password, you will be able to enter the CMOS Setup main menu, but no other menus in the CMOS Setup program. |
| IDE HDD AUTO DETECTION | Automatically detects IDE hard disk drives and enters parameters into the Standard CMOS Setup. |
| SAVE & EXIT SETUP | Save changes of values to CMOS and exit the CMOS setup program. |
| EXIT WITHOUT SAVING | Abandon all CMOS changes and exit the CMOS setup program. |

## Standard CMOS Setup

➲ **Use the Standard CMOS Setup option as follows:**

1. Choose "STANDARD CMOS SETUP" from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
Date (mm:dd:yy) : Mon, Aug 31 1998
Time (hh:mm:ss) : 10 : 40 : 23
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master : Auto 0 0 0 0 0 0 AUTO
Primary Slave : Auto 0 0 0 0 0 0 AUTO
Secondary Master : Auto 0 0 0 0 0 0 AUTO
Secondary Slave : Auto 0 0 0 0 0 0 AUTO
Drive A : 1.44M, 3.5 in.
Drive B : None
Video : EGA/VGA
Halt On : All Errors
Base Memory: 640K
Extended Memory: 130048K
Other Memory: 384K
Total Memory: 131072K
ESC : Quit
F1 : Help
↑↓→← : Select Item
(Shift)F2 : Change Color
PU/PD/+/- : Modify

2. Use the arrow keys to move between fields. Modify the selected field using the PgUp/PgDn/+/- keys. Some fields let you enter numeric values directly.

| Option | Description |
|---|---|
| Date (mn/date/year) | Type the current date. |
| Time (hour:min:sec) | Type the current time (24-hour clock). |
| Hard Disks | Choose from "Auto," "User," "None."<br>If your drive is not one of the predefined types, choose "User" and enter the following drive specifications: cylinders, heads, WPcom, L-Zone, sectors, and mode. Consult the documentation received with the drive for the values that will give you optimum performance. |

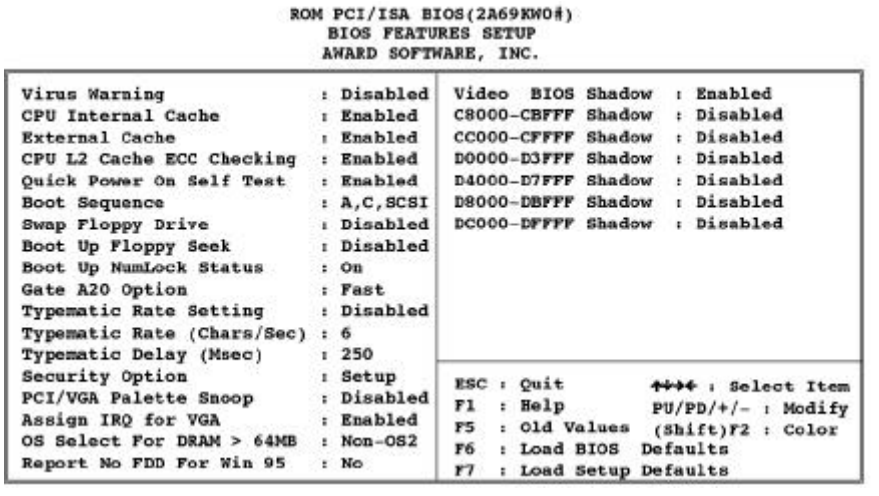
| Option | Description |
|---|---|
| Drive A<br>Drive B | Choose: 360K, 5.25in.<br>1.2M, 5.25in.<br>720K, 3.5in.<br>1.44M, 3.5in.<br>2.88M, 3.5in. or<br>None |
| Video | Choose: Mono<br>CGA40,<br>CGA80, or<br>EGA/VGA |
| Halt On | Controls whether the system stops in case of an error detected during power up.<br>Choose: All Errors (the default)<br>No Errors<br>All, But Keyboard<br>All, But Diskette<br>All, But Disk/Key |

3. After you have finished with the Standard CMOS Setup program, press the <ESC> key to return to the main menu.

## BIOS Features Setup

➲ **Use the Advanced CMOS Setup option as follows:**

1. Choose "BIOS FEATURES SETUP" from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
Virus Warning : Disabled
CPU Internal Cache : Enabled
External Cache : Enabled
CPU L2 Cache ECC Checking : Enabled
Quick Power On Self Test : Enabled
Boot Sequence : A,C,SCSI
Swap Floppy Drive : Disabled
Boot Up Floppy Seek : Disabled
Boot Up NumLock Status : On
Gate A20 Option : Fast
Typematic Rate Setting : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
PCI/VGA Palette Snoop : Disabled
Assign IRQ for VGA : Enabled
OS Select For DRAM > 64MB : Non-OS2
Report No FDD For Win 95 : No
Video BIOS Shadow : Enabled
C8000-CBFFF Shadow : Disabled
CC000-CFFFF Shadow : Disabled
D0000-D3FFF Shadow : Disabled
D4000-D7FFF Shadow : Disabled
D8000-DBFFF Shadow : Disabled
DC000-DFFFF Shadow : Disabled
ESC : Quit
F1 : Help
F5 : Old Values
F6 : Load BIOS Defaults
F7 : Load Setup Defaults
↑↓→← : Select Item
PU/PD/+/- : Modify
(Shift)F2 : Color

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn keys. Press the <F1> "Help" key for information on the available options:

| Item | Description |
|---|---|
| Virus Warning | When enabled, any attempt to write to the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus-free, bootable floppy disk to reboot and clean your system. The default setting is Disabled. |
| CPU Internal Cache | Enables the CPU internal cache. The default setting is Enabled. |
| External Cache | Enables the external cache. The default setting is Enabled. |
| CPU L2 Cache ECC Checking | Enables/disables checking of the CPU L2 cache ECC function. |
| Quick Power On Self Test | Speeds up POST after turning on the computer. When enabled, this setting will shorten or skip some check items during POST. |
| Boot Sequence | By default, the BIOS attempts to first boot from drive C: and then, if unsuccessful, from drive A:. You can change this sequence from A, C, D~F, CD ROM, SCSI, LS120, or ZIP. |
| Swap Floppy Drive | Swaps the drive designation for A: and B: floppy disk drives. |
| Boot Up Floppy Seek | When enabled, the BIOS will check whether there is a floppy disk drive installed. The default setting is Disabled. |
| Boot Up Num Lock Status | Choose On or Off. On puts the numeric keypad in Num Lock mode at boot-up. Off puts the numeric keypad in arrow key mode at boot-up. |
| Gate A20 Option | Choose Enabled or Disabled. Enable this option to allow RAM accesses above 1MB using the fast gate A20 line. This option makes accesses faster than normal, and is useful in networking operating systems. |

| Item | Description |
|---|---|
| Typematic Rate Setting | Choose Enabled or Disabled. Enable this option to adjust the keystroke repeat rate. Adjust the rate via Typematic Rate Delay and Typematic Rate. |
| Typematic Rate (Chars/Sec) | Choose the rate at which a character keeps repeating. |
| Typematic Delay (Msec) | Choose the delay between holding down a key and when the character begins repeating. |
| Security Option | Choose Setup or System. This option lets you specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program.<br>"Setup" – The password prompt only appears if you attempt to enter the CMOS Setup program.<br>"System" – The password prompt appears each time the system is booted.<br>***Note: The password function is disabled by default. For a description of enabling the password function, refer to the section "Supervisor Password & User Password" later in this chapter.*** |
| PCI/VGA Palette Snoop | Enabling this item informs the PCI/VGA card to keep silent when palette register is updated. |
| Assign IRQ for VGA | Set to determine if the VGA card uses an IRQ or not. |
| OS Select for DRAM>64MB | Set to OS/2 if your system is using OS/2 and has a memory size of more than 64MB. |
| Report No FDD For WIN 95 | Enable this item for NSTL testing only, it will report no FDD for windows 95 when the floppy disk not installed.<br>***Note This function is not supported in 2MB flash ROM*** |

| Item | Description |
|---|---|
| Video BIOS Shadow | When enabled, the ROM BIOS on the video display card is copied into system DRAM to enhance performance. The default setting is Enabled. |
| Shadow Option Group | When enabled, the ROM on the expansion card with the specific addresses is copied into system DRAM. It will also reduce the memory available by between 640KB and 1024KB. The default setting for this feature is Disabled. |

3. After you have finished with the BIOS Features Setup, press the <ESC> key to return to the main menu.

## Chipset Features Setup

Use this setup to enable/disable features of the main board's chipset registers. The chipset manages bus speed and access to system memory resources such as DRAM. It also coordinates the communications between the conventional ISA bus and the PCI bus. *These items should never need to be changed.* The default settings have been chosen because they provide the best operating conditions for your system.

The first chipset settings deal with CPU access to DRAM. The default timings have been carefully chosen and should only be altered if data is lost. Such a scenario might well occur if your system has mixed-speed DRAM chips installed, so that greater delays may be required to preserve the integrity of data held in the slower memory chips.

ⓘ *Change these settings only if you are thoroughly familiar with the chipset.*

➲ **Use the Chipset Features Setup option as follows:**

1. Choose "CHIPSET FEATURES SETUP" from the main menu. The following screen appears:

```
ROM PCI/ISA BIOS(2A69KW0#)
  CHIPSET FEATURES SETUP
   AWARD SOFTWARE, INC.
```

| | |
|---|---|
| Auto Configuration : Enabled<br>EDO DRAM Speed Selection: 60ns<br>EDO CASx# MA Wait State : 2<br>EDO RASx# Wait State : 2<br>SDRAM RAS-to-CAS Delay : 3<br>SDRAM RAS Precharge Time: 3<br>SDRAM CAS Latency Time : 3<br>SDRAM Precharge Control : Enabled<br>DRAM Data Integrity Mode: ECC<br>System BIOS Cacheable : Enabled<br>Video BIOS Cacheable : Enabled<br>Video RAM Cacheable : Disabled<br>8 Bit I/O Recovery Time : 1<br>16 Bit I/O Recovery Time: 1<br>Memory Hole At 15M-16M : Disabled<br>Passive Release : Enabled<br>Delayed Transaction : Enabled<br>AGP Aperture Size(MB) : 64 | ESC : Quit ↑↓→← : Select Item<br>F1 : Help PU/PD/+/- : Modify<br>F5 : Old Values (Shift)F2 : Color<br>F6 : Load BIOS Defaults |

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

| Item | Description |
|---|---|
| Auto Configuration | Choose Enabled/Disabled. When enabled, selects predetermined optimal values for DRAM. When disabled, chipset parameters revert to setup information stored in CMOS.<br>***Note: When this item is enabled, the predefined items will become SHOW-ONLY.*** |
| EDO DRAM Speed Selection | Choose 50ns or 60ns. The value is this field must correspond to the speed of the DRAM installed in your system. This value is access speed, where a lower value means a faster system. |
| EDO CASx# MA Wait State | Lets you select the timing control type of the EDO DRAM CAS memory address bus. Choose 1 or 2. |
| EDO RASx# Wait State | Lets you select the timing control type of the EDO DRAM RAS memory address bus. Choose 1 or 2. |
| SDRAM RAS-to-CAS Delay | Determines the timing of the transition from RAS# to CAS#. |
| SDRAM Precharge Time | Determines the number of the CPU clocks allocated for the RAS# to accumulate its charge before the DRAM is refreshed. |
| SDRAM CAS Latency Time | The values in this field were set according to the specification of the installed SDRAM type. If your SDRAM has the SPD IC installed, the BIOS will read the data and instruct you to set the latency to 2 for better performance when your SDRAM meets this timing specification. |

| Item | Description |
|---|---|
| SDRAM RAS Precharge Control | Choose Enabled/Disabled. When enabled, the SDRAM RAS Precharge function is enabled. |
| DRAM Data Integrity Mode | When choose ECC, the system BIOS will automatically check your DIMM if it supports ECC or Non-ECC and will show this message on boot up screen.<br>Choose Non-ECC when your DIMM does not support it. |
| System BIOS Cacheable | Choose Enabled/Disabled. When enabled, caching of the system BIOS at F0000h-FFFFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur. |
| Video BIOS Cacheable | Choose Enabled/Disabled. When enabled, caching of the video BIOS at C0000h-F7FFFh is allowed, enhancing system performance. However, if any program writes to this memory area, a system error may occur. |
| Video RAM Cacheable | Choose Enabled/Disabled. When enabled, caching of the video RAM at A000h and B000h is allowed. |
| 8 Bit I/O Recovery Time | Choose NA or 1 to 8 CPU clocks. This option lets you determine the recovery time of 8-bit I/O. The I/O recovery mechanism adds bus cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is much faster than the ISA bus. |

| Item | Description |
|---|---|
| 16 Bit I/O Recovery Time | Choose NA or 1 to 4 CPU clocks. This option lets you determine the recovery time of 16-bit I/O. The I/O recovery mechanism adds bus cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is much faster than the ISA bus. |
| Memory Hole At 15M-16M | Choose Enabled/Disabled. When enabled, lets you reserve a system memory area for special ISA cards. The chipset accesses code/data of these areas from the ISA bus directly. Normally, these areas are reserved for memory-mapped I/O cards. |
| Passive Release | Choose Enabled/Disabled if you have an ISA card compatibility problem. When enabled, this option lets you control the Passive Release function of the chipset. This function is used to meet the latency of the ISA bus master. |
| Delayed Transaction | Choose Enabled/Disabled if you have an ISA card compatibility problem. When enabled, this option lets you control the Delayed Transaction function of the chipset. This function is used to meet the latency of the PCI cycles to or from the ISA bus. |
| AGP Aperture Size (MB) | Enter a value from 4MB to 256MB to determine the effective size of the graphics aperture used in the particular PAC configuration. The larger the value, the better the AGP performance. |

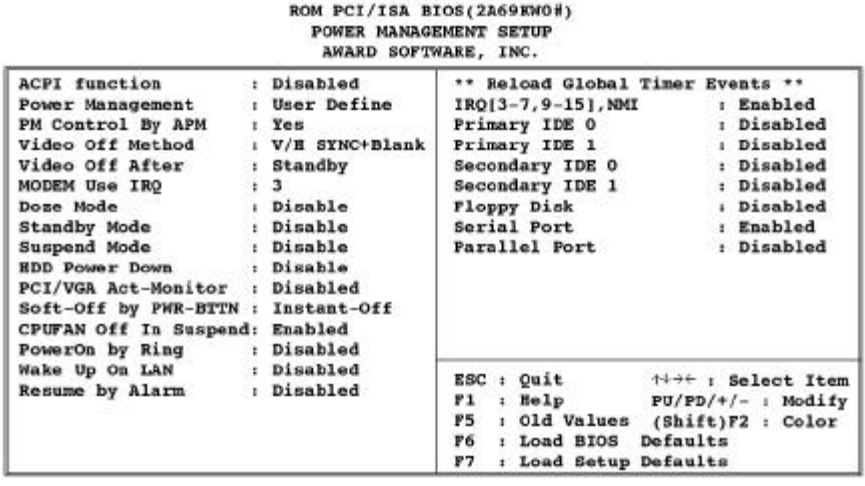
3. After you have finished with the Chipset Features Setup, press the <ESC> key to return to the main menu.

## Power Management Setup

The Power Management Setup controls the mainboard's "green" features. To save energy, these features shut down the video display and hard disk drive.

➲ **Use the Power Management Setup option as follows:**

1. Choose “Power Management Setup” from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
ACPI function : Disabled
Power Management : User Define
PM Control By APM : Yes
Video Off Method : V/H SYNC+Blank
Video Off After : Standby
MODEM Use IRQ : 3
Doze Mode : Disable
Standby Mode : Disable
Suspend Mode : Disable
HDD Power Down : Disable
PCI/VGA Act-Monitor : Disabled
Soft-Off by PWR-BTTN : Instant-Off
CPUFAN Off In Suspend: Enabled
PowerOn by Ring : Disabled
Wake Up On LAN : Disabled
Resume by Alarm : Disabled
** Reload Global Timer Events **
IRQ[3-7,9-15],NMI : Enabled
Primary IDE 0 : Disabled
Primary IDE 1 : Disabled
Secondary IDE 0 : Disabled
Secondary IDE 1 : Disabled
Floppy Disk : Disabled
Serial Port : Enabled
Parallel Port : Disabled
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

| Item | Description |
|---|---|
| ACPI Function | Enables/disables the ACPI function. |
| Power Management | Choose Disable, User Define, Min Saving, or Max Saving.<br>"User Define" – Lets you specify when the HDD and system will shut down.<br>"Min Saving" – Predefined timer value of 4-12 minutes.<br>"Max Saving" – Predefined timer value of 1 minute. |
| PM Control by APM | Choose Yes/No for Advanced Power Management. If APM is used, you must run POWER.EXE under DOS v6.0 or higher. |
| Video Off Method | Choose V/H SYNC+Blank(Default), DPMS, Blank Screen.<br>When Power manafement blanks the monitor screen, the default setting blanks the screen and turns off vertical and horizontal scanning. The DPMS (Display Power Management System) setting allows the BIOS to control the video card if it has the DPMS features. If you don´t have a Green monitor, use the Blank Only Option. |
| Video Off After | Choose the power management mode that will cause the video monitor to power down. Choose NA, DOZE, STANDBY, or SUSPEND. |
| MODEM Use IRQ | Choose the IRQ used by the modem. |
| Doze Mode | Sets the time for Doze mode or disables it. |
| Standby Mode | Sets the time for Standby mode or disables it. |
| Suspend Mode | Sets the time for Suspend mode or disables it. |
| HDD Power Down | Sets the time for the HDD power down mode or disables it. |

| Item | Description |
|---|---|
| PCI/VGA ACT-Monitor | When Enabled, any video activity restarts the global timer for Standby mode. |
| Soft-Off by PWR-BTTN | Choose Instant-Off or Delay 4 Sec.<br>"Instant-Off" – Causes the power to turn off immediately when you press the power button.<br>"Delay 4 Sec." – Causes the system to go to Suspend mode when you press the power button for less than 4 seconds. When you hold the button down for more than 4 seconds, the power goes off. |
| CPUFAN Off in Suspend | Choose Enable or Disable.<br>"Enable" – Causes FAN1 and FAN2 to stop when the system goes into Suspend mode.<br>"Disable" – Causes FAN1 and FAN2 to operate all the time. |
| PowerOn by Ring | Choose Enable or Disable. When enabled, the system will turn on when the modem rings. |
| Wake Up On LAN | Choose Enable or Disable. When enabled, the system will turn on by an instruction from a network server.<br>***Note: For this function to operate, your LAN card must support the function.*** |
| Resume by Alarm | Choose Enable or Disable. When enabled, the system will turn on at the specified date and time. |

| Item | Description |
|---|---|
| Reload Global Timer Events | Choose Enable or Disable.<br>"Enable" – Causes the Doze mode, Standby mode, and Suspend mode to reload.<br>"Disable" – The Doze mode, Standby mode, and Suspend mode will not reload. |

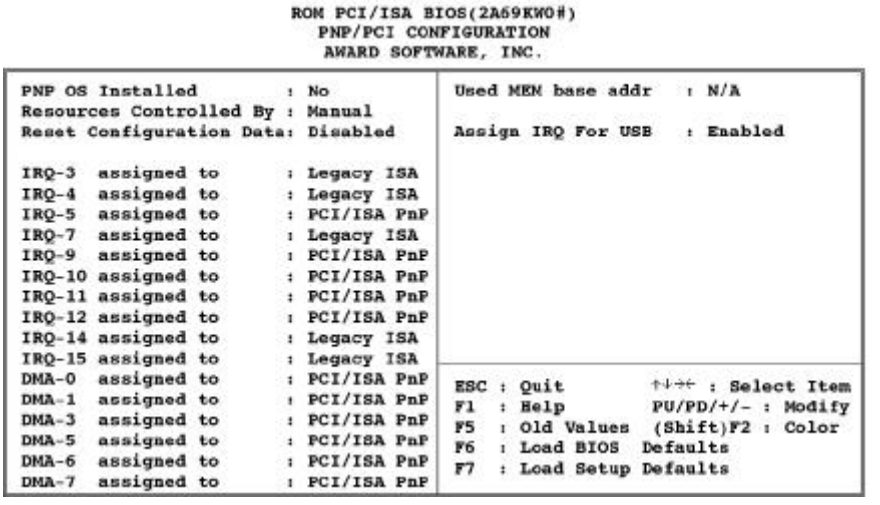
3. After you have finished with the Power Management Setup, press the <ESC> key to return to the main menu.

## PNP/PCI Configuration

This setup is used to configure Plug 'n' Play IRQ assignments and route PCI interrupts to designated ISA interrupts.

➲ **Use the PCI Configuration Setup option as follows:**

1. Choose "PCI Configuration Setup" from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.
PNP OS Installed : No
Resources Controlled By : Manual
Reset Configuration Data: Disabled
IRQ-3 assigned to : Legacy ISA
IRQ-4 assigned to : Legacy ISA
IRQ-5 assigned to : PCI/ISA PnP
IRQ-7 assigned to : Legacy ISA
IRQ-9 assigned to : PCI/ISA PnP
IRQ-10 assigned to : PCI/ISA PnP
IRQ-11 assigned to : PCI/ISA PnP
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : Legacy ISA
IRQ-15 assigned to : Legacy ISA
DMA-0 assigned to : PCI/ISA PnP
DMA-1 assigned to : PCI/ISA PnP
DMA-3 assigned to : PCI/ISA PnP
DMA-5 assigned to : PCI/ISA PnP
DMA-6 assigned to : PCI/ISA PnP
DMA-7 assigned to : PCI/ISA PnP
Used MEM base addr : N/A
Assign IRQ For USB : Enabled
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

| Item | Description |
|---|---|
| PNP OS Installed | Choose Yes or No. When Yes is selected, an IRQ will be assigned by the OS. |
| Resources Controlled By | Choose Auto or Manual. This option specifies whether resources are controlled by automatic or manual configuration. |

| Item | Description |
|---|---|
| Reset Configuration Data | Choose Enable or Disable.<br>"Enable" -- PNP configuration data is reset in BIOS.<br>"Disable" -- PNP configuration data is retained in BIOS. |
| IRQ-*x* Assigned to | Choose Legacy ISA or PCI/ISA PnP. Determines whether the IRQ is assigned to the ISA bus and thus is not available to any PCI slot. |
| DMA-*x* Assigned to | Choose Legacy ISA or PCI/ISA PnP. Determines whether the DMA is assigned to the ISA bus and thus is not available to any PCI slot. |
| Used Mem base addr | Select a base address for the memory area used by any peripheral that requires high memory. |
| Assign IRQ For USB | Choose Enable or Disable. Specifies whether the USB uses an IRQ. |

3. After you have finished with the PCI Configuration Setup, press the <ESC> key to return to the main menu.

## Load BIOS Defaults

This option loads the troubleshooting default values permanently stored in the BIOS ROM. This is useful if you are having problems with the main board and need to debug or troubleshoot the system. The loaded default settings do not affect the Standard CMOS Setup screen.

To use this feature, highlight it on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the BIOS default values. Press the <Y> key and then press <Enter> if you want to load the BIOS defaults.

## Load Setup Defaults

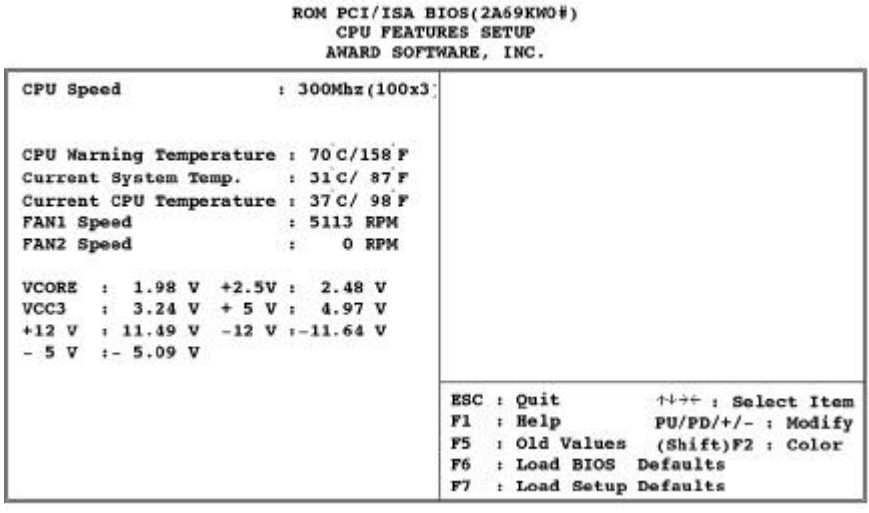
This option loads optimized settings stored in the BIOS ROM. The auto-configured settings do not affect the Standard CMOS Setup screen.

To use this feature, highlight it on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the Setup default values. Press the <Y> key and then press <Enter> if you want to load the Setup defaults.

## CPU Features Setup

➲ **Use the CPU Features Setup option as follows:**

1. Choose "CPU FEATURES SETUP" from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
CPU FEATURES SETUP
AWARD SOFTWARE, INC.
CPU Speed : 300Mhz(100x3
CPU Warning Temperature : 70°C/158°F
Current System Temp. : 31°C/ 87°F
Current CPU Temperature : 37°C/ 98°F
FAN1 Speed : 5113 RPM
FAN2 Speed : 0 RPM
VCORE : 1.98 V +2.5V : 2.48 V
VCC3 : 3.24 V + 5 V : 4.97 V
+12 V : 11.49 V -12 V :-11.64 V
- 5 V :- 5.09 V
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

| Item | Description |
|---|---|
| CPU Speed | For a 66MHz FSB (Front-Side Bus) CPU, choose 200MHz (66x3), 233MHz (66x3.5), 266MHz (66x4), 300MHz (66x4.5), 333MHz (66x5), 366MHz (66x5.5), 400MHz (66x6), 433MHz (66x6.5), 466MHz (66x7), 500MHz (66x7.5), 533MHz (66x8) or Manual.<br><br>For a 100MHz FSB CPU, choose 300MHz (100x3),350MHz (100x3.5), 400MHz (100x4), 450MHz (100x4.5), 500MHz (100x5), 550MHz (100x5.5), 600MHz (100x6), 650MHz (100x6.5), 700MHz (100x7), 750MHz (100x7.5), 800MHz (100x8) or Manual.<br><br>If you choose Manual, you can choose the CPU Ratio (3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, or 8) and CPU FSB Frequency. The available CPU Frequency options depend on the CPU FSB clock frequency. For a 66MHz FSB CPU, choose 66MHz, 75MHz, or 83MHz; For a 100MHz CPU, choose 100MHz, 103MHz, 112MHz, 124MHz, or 133MHz. If the over-clocking jumper (JP5) is open, you can run the 100/103/112/124/133MHz clock frequency when you use the 66MHz FSB CPU. See the JP5 setting section for more detailed information.<br><br>***Note: We recommend you use the standard 66MHz or 100MHZ CPU frequency. Please make sure your SDRAM, display card, and other peripherals can run the over-clocking frequency when the over frequency setting is being used.***<br><br>***Note: When you use over-clocking and the system cannot boot up, there are two ways to restore the low-speed values for booting: press the "INS" key and turn on the power supply until the screen displays, or clear the CMOS (refer to description of the JP4 setting).*** |

| Item | Description |
|---|---|
| CPU Warning Temperature | Choose 70°C/158°F, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 65°C/145°F, 66°C/151°F or Disable. When the CPU temperature exceeds the CPU Warning Temperature setting, the board will generate a beep alarm.<br>***Note: This item appears only if the optional Winbond W83781D system monitor IC is installed on the board.*** |
| Current System Temperature | Displays the current system temperature.<br>***Note: This item appears only if the optional Winbond W83781D system monitor IC is installed on the board.*** |
| Current CPU Temperature | Displays the current CPU temperature.<br>***Note: This item appears only if the optional Winbond W83781D system monitor IC is installed on the board.*** |
| FAN1, FAN2 Speed | Displays the running speeds of FAN1 and FAN2, respectively. If "0" appears, the fan is either defective, not connected, or does not meet standard specification.<br>***Note: These items appear only if the optional Winbond W83781D system monitor IC is installed on the board.*** |
| Voltage Indicators | Displays voltage values detected by the Winbond W83781D system monitor IC.<br>***Note: This item appears only if the optional Winbond W83781D system monitor IC is installed on the board.*** |

ⓘ ***If you change the CPU after the original installation, the BIOS will automatically detect the new CPU and display an error message. Please run this setup again and select the correct CPU type.***

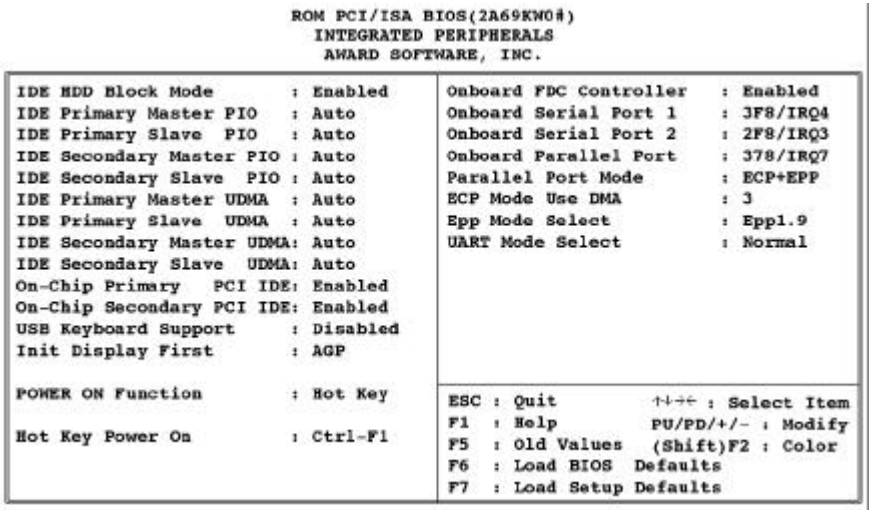
3. After you have finished with the CPU Features Setup, press the <ESC> key to return to the main menu.

## Integrated Peripherals

Use this setup to configure onboard I/O functions.

➲ **Use the Integrated Peripherals option as follows:**

1. Choose "Integrated Peripherals" from the main menu. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.
IDE HDD Block Mode : Enabled
IDE Primary Master PIO : Auto
IDE Primary Slave PIO : Auto
IDE Secondary Master PIO : Auto
IDE Secondary Slave PIO : Auto
IDE Primary Master UDMA : Auto
IDE Primary Slave UDMA : Auto
IDE Secondary Master UDMA: Auto
IDE Secondary Slave UDMA: Auto
On-Chip Primary PCI IDE: Enabled
On-Chip Secondary PCI IDE: Enabled
USB Keyboard Support : Disabled
Init Display First : AGP
POWER ON Function : Hot Key
Hot Key Power On : Ctrl-F1
Onboard FDC Controller : Enabled
Onboard Serial Port 1 : 3F8/IRQ4
Onboard Serial Port 2 : 2F8/IRQ3
Onboard Parallel Port : 378/IRQ7
Parallel Port Mode : ECP+EPP
ECP Mode Use DMA : 3
Epp Mode Select : Epp1.9
UART Mode Select : Normal
ESC : Quit ↑↓→← : Select Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift)F2 : Color
F6 : Load BIOS Defaults
F7 : Load Setup Defaults

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUp/PgDn keys. For information on the various options, press the <F1> key.

| Item | Description |
|---|---|
| IDE HDD Block Mode | Enables/disables the IDE HDD Block Mode function.<br>***Note: Not all drives support this function.*** |
| IDE Primary Master/Slave PIO | Lets you select a PIO mode for the onboard PCI IDE. |
| IDE Secondary Master/Slave PIO | Lets you select a PIO mode for the onboard PCI IDE. |
| IDE Primary Master/Slave UDMA | Enables/disables support for Ultra DMA/33 IDE devices. |
| IDE Secondary Master/Slave UDMA | Enables/disables support for Ultra DMA/33 IDE devices. |
| On-Chip Primary/ Secondary PCI IDE | Enables/disables the primary/secondary onboard PCI IDE. |
| USB Keyboard Support | Enables/disables USB keyboard support. |
| Init Display First | Lets you choose the priority of AGP and PCI VGA cards. |

| Item | Description |
|---|---|
| POWER ON Function | Choose Button Only, Password, Hot Key, Mouse Left, or Mouse Right.<br><br>"Button Only" -- When selected, you will not be able to use the keyboard password, keyboard hot keys, or PS/2 mouse to turn on system power.<br><br>***Note: You can select Instant Off or Delay 4 Sec. for the power button in the "Soft-Off by PWR-BTTN" item of "Power Management Setup".***<br><br>"Password" – When this is selected and pins 1-2 of JP6 are shorted, you will only be able to turn on the system by entering the specified password--you will not be able to turn on the system using any other methods.<br><br>"Hot Key" – When this is selected and pins 1-2 of JP6 are shorted, you can turn on the system power either by pressing the selected hot keys or by pressing the power button.<br><br>"Mouse Left" – When this is selected pins 1-2 of JP6 are shorted, you can turn on the system by double-clicking the left mouse button or by pressing the power button.<br><br>"Mouse Right" -- When this is selected and pins 1-2 of JP6 are shorted, you can turn on the system by double-clicking the right mouse button or by pressing the power button.<br><br>***Note: To ensure the keyboard and PS/2 mouse power on functions work properly, make sure your ATX power supply supports the 5V Standby voltage up to 720mA***. |

| Item | Description |
|---|---|
| Onboard FDC Controller | Enables/disables the onboard FDC controller. |
| Onboard Serial Port 1 and 2 | Enables/disables the onboard serial port 1 and 2, respectively. |
| Onboard Parallel Port | Enables/disables the onboard parallel port. |
| Parallel Port Mode | Lets you select the parallel port mode. |
| ECP Mode Use DMA | Select a DMA channel for the port. |
| EPP Mode Selection | Select EPP port type 1.7 or 1.9. |
| UART Mode Select | Choose Normal for general use or IRDA, ASKIK for infrared use. |

3. After you have finished with the setup, press the <ESC> key to return to the main menu.

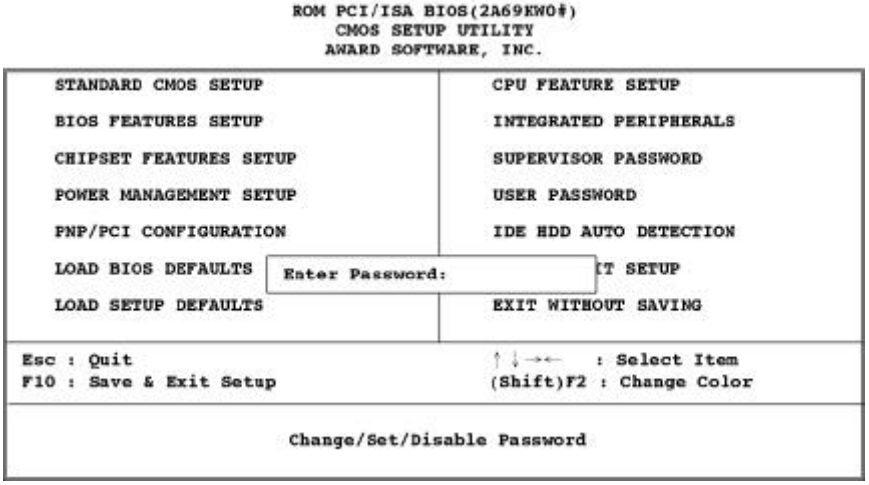
## Supervisor/User Password

The password options let you prevent unauthorized system boot-up or unauthorized use of CMOS Setup. The Supervisor Password allows both system and CMOS Setup program access; the User Password allows access to the system and the CMOS Setup Utility main menu.

The password functions are disabled by default. You can use these options to enable a password function or, if a password function is already enabled, change the password.

To change a password, first choose a password option from the main menu and enter the current password. Then type your new password at the prompt. The password is case sensitive and you can use up to 8 alphanumeric characters. Press <Enter> after entering the password. At the next prompt, confirm the new password by typing it and pressing <Enter> again.

ⓘ ***If you forget a password, you must clear CMOS memory and run the CMOS Setup program again (refer to the description for setting JP4).***




After you use this option to enable a password function, use the “Security Option” in "BIOS Features Setup” to specify whether a password is required every time the system boots or only when an attempt is made to enter the CMOS Setup program.

## IDE HDD Auto Detection

If your system has an IDE hard disk drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

This utility will detect as many as four IDE drives if your system configuration supports that many. In sequence, a set of parameters for each drive will appear in the box. To accept the entries displayed, press the <Y> key. To skip to the next drive, press the <N> key. If you accept the value, the parameters will appear listed beside the drive letter on the screen, and the program will attempt to detect the parameters for the next drive. If you press the <N> key to skip rather than accept a set of parameters, zeroes are entered after that drive letter.

Any entries accepted will be automatically entered on the line for that drive in the standard CMOS setup. Any entries skipped are ignored and nothing is entered for that drive in standard CMOS setup.

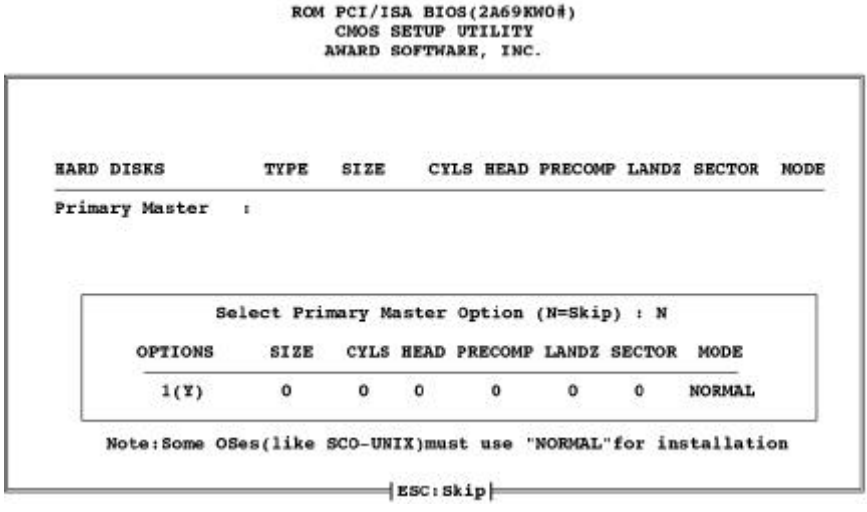
ⓘ ***The onboard IDE controller supports Enhanced IDE and has two connectors that support a total of four IDE devices. If you use another IDE controller that does not have Enhanced IDE support for four devices, you can only install two IDE hard disk drives. Your IDE controller must support Enhanced IDE features in order to use drives E: and F:.***

☛ ***This utility will only detect one set of parameters for an IDE drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it. If the hard disk drive is already formatted when you install it and different parameters were used rather than those detected here, you will have to enter them manually.***

If the parameters listed don't match the ones used when the drive was formatted, the drive won't be readable. If the auto-detect parameters displayed do not match the ones that should be used in your drive, do not accept them. Press the <N> key to reject the values and enter the correct ones manually from the Standard CMOS Setup screen.

➲ **Enable the Auto Detect Hard Disk function as follows:**

1. Choose "IDE HDD AUTO DETECTION" in the main menu and press <Enter>. The following screen appears:


ROM PCI/ISA BIOS(2A69KW0#)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master :
Select Primary Master Option (N=Skip) : N
OPTIONS SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
1(Y) 0 0 0 0 0 0 NORMAL
Note:Some OSes(like SCO-UNIX)must use "NORMAL"for installation
ESC:Skip

2. Press <ESC> to exit to the main menu.

ⓘ ***If you are setting up a hard disk drive that supports LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA or an LBA drive. Do not choose Large or Normal.***

## Save & Exit Setup

This function automatically saves all CMOS vales before leaving Setup.

## Exit Without Saving

Use this function to exit Setup without saving the CMOS values.

# 4 Drivers and Utilities

The W6BXA Drivers and Utilities CD include the following item:

- Bus Mastering EIDE Driver
- Award WINP2X4 Utility
- Award BIOS Flash Utility
- System Monitoring utility

Inserting the Drivers and Utilities CD into the CD ROM drive (example E:) and run the setup.exe program from the root of this CD.

The setup screen will appear as following picture:

## 4.1 Installing the Bus Mastering EIDE Driver

The Bus Mastering EIDE logic designed in the Intel 82371AB/EB chipset is intended to reduce the workload of the CPU and make the CPU running more efficiently. The driver must be loaded in order to make the EIDE drive operating at mastering DMA or Ultra DMA/33 mode.

➲ **Installing the BUS Mastering EIDE Driver for Windows 95**

1. Insert the Drivers and Utilities CD into the CD ROM drive (example E:) and run the setup.exe program from the root of this CD.
2. Click the "IDE BUS MASTER" Item from the setup screen.
3. The "Intel IDE Bus Master Setup" screen show up and click "Windows 95" item.
4. You will see The "Intel PIIX Bus Master IDE Driver for Windows 95" Prompt and Click "Install" item.
5. The Question will show on the screen " The driver has problem on system where a real mode ATAPI CD-ROM device driver is installed in autoexec,bat or config.sys. Do you still wish to install the driver?
6. Click "Yes" to modify the Autoexec.bat and Config.sys. After setup complete, the "Setup has completed modifications and will restart your system" prompt will appear. Click "OK" to restart your system.
7. After restart the Windows 95 will build up the driver information database.

### Installing the BUS Mastering EIDE Driver for Windows NT

1. Insert the Drivers and Utilities CD into the CD ROM drive (example E:) and run the setup.exe program from the root of this CD.
2. Click the "IDE BUS MASTER" Item from the setup screen.
3. You will see the "Intel IDE Bus Master Setup" prompt on screen and click "Windows NT" item.
4. The question will show on the screen " Do you wish to read the license agreement and continue the installation?" click "YES".
5. "The PIIX4 Driver Software will be installed in the following directory on your hard disk" will show on the screen and specify the directory (default is C:\PIIX4IDE).
6. After copying the files, the screen will show "Following directions in README.TXT for driver installation". Click "Yes" to read the README.TXT file for more detail information of installation. You also can read the README.TXT files in the directory C:\PIIX4IDE.
7. Close the README.TXT window and click "Control Panel"=> "SCSI Adapters"=> "Drivers"=> "ADD"=> "Have Disk". The "Install From Disk" will appear and copy manufacturer's files from C:\PIIX4IDE directory.
8. Click "OK" and after copy file you must restart your computer before the new setting will take affect.
9. After restart Click "Control Panel"=> "SCSI Adapters"=> "Drivers"=> "Remove" to remove the "IDE CD-ROM [ATAPI1.2]/DUAL-channel PCI IDE controller"
10. You must restart your computer before the new setting will take affect.

## 4.2 Using the WINP2X4 Utility for Windows 95

1. Insert the Drivers and Utilities CD into the CD ROM drive (example E:) and run the setup.exe program from the root of this CD.
2. Click the "Award winP2X4" item from the setup screen.
3. The setup program will running under DOS mode and show the following message:

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   **=== Windows 95 Implementer for Intel PIIX4 ===**

   **The Windows 95 directory is C:\windows (Y/N)**

   Typing "Y" if the directory is coreect or "N" to change the directory.
4. After install you have to close the DOS mode windows and restart the Windows 95 system right now
5. After restart the Windows 95 will build up driver information and the following message will appear:

   **The file "ideatapi.com" on (Unknown) could not be found**

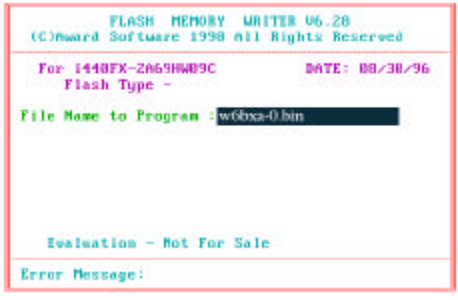
6. Select the "ideatapi.cmd" file in C:\windows\system\iosubsys directory. After copying file reboot your system.

## 4.3 Using the BIOS Flash Utility

The BIOS of the W6BXA mainboard can be updated by using the Awardflash Utility. A new version of the BIOS can downloaded from the factory's Web site.

➲ **Updating the system BIOS**

1. Bootup the system from DOS prompt without loading any memory manager(HIMEM, EMM386, Qemm386,....)
2. Inserting the Drivers and Utilities CD into the CD ROM drive (example E:) and execute the awdflash.exe program from the directory (E:\tools) of this CD
3. You will see a Prompt like this:




4. Entering the Update BIOS files name

   Example: W6BXA-0.bin

5. After loading the new BIOS code , the utility will prompt you to save original BIOS code into your HDD or Floppy. Press "Y" to store it as "BIOS.BIN"
6. After the old BIOS has been sucessfuly saved, Press "Y" to replace BIOS.

ⓘ ***Do not turn off the power during "Flashing BIOS"***

7. Reboot the system and run the setup program again.

ⓘ ***When you update the BIOS, if the updated BIOS date is older than the current BIOS date, you must disable the "System BIOS Cacheable" option in the Chipset Features Setup.***

## 4.4 Installing System Monitoring Utility

The optional Winbond W83781D Hardware Environment Monitoring chip allows monitoring of system voltage, temperature, and fan speed.

- The board monitors system voltage levels to ensure a stable current for critical board components.
- To prevent system overheating and damage, the board provides heat sensors (the Pentium II processor requires a special heatsink with a thermal sensor) to monitor the CPU and system temperatures.
- To prevent system overheating and damage, the board can monitor the CPU fan and system fan speeds. You can set each fan for its normal RPM range and alarm threshold.

➲ **Hardawre Doctor Setup**

1. Insert the Drivers and Utilities CD into the CD ROM drive (example E:) and run the setup.exe program from the root of this CD.
2. Click the “System Monitor” item from the setup screen.
3. You will see a windows Prompt :

   “Setup cannot continue because some system files are out of date on your system”. Click “OK” to Continue
4. After copy files to HDD,You will see a windows Prompt:

   “Do you want to resatrt windows now? Click “YES” to restart.
5. After restart run the procedure 1 and the following message will appear:

   “Welcome to the Hardware Doctor installation Program”

   Click “OK” and continue setup procedure
6. Select the directory to install Hardware Doctor program. The default directory is “:\Program Files\Hareware Doctor\”
7. After setup is completed, you need to restart the computer before you active the program.

8. The “Hard Doctor” option will be added to the “Program “. Click the “Hardware Doctor” icon to active the program.

**Setting the threshold of Hardawre Doctor**

The default value is preset during the installation. You can change the threshold limit by clicking the increase/decrease button.